IN THE CLAIMS

115.(Amended) A method comprising the steps of:

forming a composition including copper, oxygen and [any] an element selected from the group consisting of at least one Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, where said composition is a mixed copper oxide having a non-stoichiometric amount of oxygen therein and exhibiting a superconducting state at a temperature greater than 26°K;

maintaining said composition in said superconducting state at a temperature greater than 26°K; and

passing an electrical current through said composition while said composition is in said superconducting state.

120. (Amended) A method comprising the steps of:

forming a composition including a transition metal, oxygen and [any] an element selected from the group consisting of at least one Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, where said composition is a mixed transitional metal oxide formed from said transition metal and said oxygen, said mixed transition metal oxide having a non-stoichiometric amount of oxygen therein and exhibiting a superconducting state at a temperature greater than 26°K;

maintaining said composition in said superconducting state at a temperature greater than 26°K; and

passing an electrical current through said composition while said composition is in said superconducting state.

123.(Amended) A superconductive method for conducting an electric current

essentially without resistive losses, comprising:

(a) providing a superconductor element made of a superconductive composition, the superconductive composition consisting

essentially of a transition metal-oxide compound having a layer-type perovskite-like crystal structure, the transition metal-oxide compound including at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, the composition having a superconductive/resistive transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature [T] T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{\rho-0}$ of the superconductive composition; and

(c) causing an electric current to flow in the superconductor element.

129 (Amended). A method comprising providing a composition having a transition temperature greater than 26°K, the composition including a rare earth or alkaline earth element, a transition metal element capable of exhibiting multivalent states and oxygen, including at least one phase that exhibits superconductivity at temperature in excess of 26°K, maintaining said composition at said temperature to exhibit said superconductivity and passing an electrical superconducting current through said composition [while] <u>with said phase</u> exhibiting said superconductivity.

130 (Amended). A method comprising providing a superconducting transition

metal oxide having a superconductive onset temperature greater than 26°K, maintaining said superconducting transition metal oxide [being] at a temperature less than

said superconducting onset temperature and flowing a superconducting current therein.

131 (Amended). A method comprising providing a superconducting copper oxide having a superconductive onset temperature greater than 26°K, [maintaing] <u>maintaining</u> said superconducting copper oxide at a temperature less than said superconducting onset temperature and flowing a superconducting current [therein] <u>in said superconducting oxide</u>.

132 (Amended) . A method comprising providing a superconducting oxide composition having a superconductive onset temperature greater than 26°K, maintaining said superconducting copper oxide at a temperature less than said superconducting onset temperature and flowing a [superconduting]

superconducting current therein, said composition comprising at least one each of rare earth, an alkaline earth, and copper.

133 (Amended). A method comprising providing a superconducting oxide composition having a superconductive onset temperature greater than 26°K, [maintianing] maintaining said superconducting copper oxide at a temperature less than said superconducting onset temperature and flowing a superconducting electrical current therein, said composition comprising at least one each of a Group III B element, an alkaline earth, and copper.

134. (Amended) A method comprising flowing a superconducting electrical current in a transition metal oxide having a T_c greater than 26°K and maintianing said transition metal oxide at a temperature less than said T_c.

135. (Amended) A method comprising flowing a superconducting electrical current in a copper oxide having a T_c greater than 26°K and maintianing said copper oxide at a temperature less than said T_c .

136. (Amended) A method comprising the steps of:

forming a composition of the formula Ba_xLa_{x-5}, Cu50Y, wherein

x is from about 0.75 to about 1 and y is the oxygen deficiency resulting from annealing said composition at temperatures from about 540°C to about 950°C and for times of about 15 minutes to about 12 hours, said composition having a metal oxide phase which exhibits a superconducting state at a critical temperature in excess of 26°K;

maintaining the temperature of said composition at a temperature less than said critical temperature to induce said superconducting state in said metal oxide phase; and

passing an electrical current through said composition while said metal oxide phase is in said superconducting state.

137. (Amended) A method comprising flowing a superconducting electrical current

in a composition of matter having a T_c greater than 26°K,

said composition comprising at least one each of a III B

element, an alkaline earth, and copper oxide and maintianing said

composition of matter at a temperature less than said T_c.

138. (Amended) A method comprising flowing a superconducting electrical current

in a composition of matter having a T_c greater than 26°K,

said composition comprising at least one each of a rare

earth, alkaline earth, and copper oxide and maintianing said

composition of matter at a temperature less than said T_c.

139. (Amended) A method comprising flowing a superconducting electrical current

in a composition of matter having a T_c greater than 26°K,

said composition comprising at least one each of a rare

earth, and copper oxide and maintianing said composition of matter at a temperature less than said T_c.

140. (Amended) A method comprising flowing a superconducting elecrical current in a composition of matter having a T_c greater than 26°K carrying, said composition comprising at least one each of a III B element, and copper oxide and maintianing said composition of matter at a temperature less than said T_c.

141. (Amended) A method comprising flowing a superconducting electrical current in a transition metal oxide comprising a T_c>26°K and maintianing said transition metal oxide at a temperature less than said T_c.

142.(Amended) A method comprising flowing a superconducting electrical current in a copper oxide composition of matter comprising a T_c>26°K and maintianing said copper oxide composition of matter at a temperature less than said [TC] T_c.

Added claims:

143 (Added). A method, comprising the steps of:

forming a composition including a transition metal, a [rare earth or rare earth-like] group IIIB element, an alkaline earth element, and oxygen, where said composition is a mixed transition metal oxide having a non-stoichiometric amount of oxygen therein and exhibiting a superconducting state at a temperature greater than 26°K,

maintaining said composition in said superconducting state at a temperature greater than 26°K, and

passing an electrical current through said composition while said composition is in said superconducting state.

144 (Added). The method of claim 143, where said transition metal is copper.

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145 (Added). A superconductive method for causing electric current flow in a superconductive state at a temperature in excess of 26 K, comprising:

(a) providing a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a [layer-type perovskite-like] substantially layered crystal structure, the composition having a superconductor transition temperature T_c of greater than 26 K;

(b) maintaining the superconductor element at a temperature above 26 K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) causing an electric current to flow in the superconductor element.

146 (Added). The superconductive method according to claim 145 in

which the copper-oxide compound of the superconductive composition includes at least one element selected from the group consiting of a rare-earth element and a Group III B element and at least one alkaline-earth element.

147 (Added). The superconductive method according to claim 146 in which the rare-earth or rare-earth-like element is lanthanum.

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148 (added). The superconductive method according to claim 146 in which the alkaline-earth element is barium.

149 (Added). The superconductive method according to claim 145 in which the copper-oxide compound of the superconductive composition includes mixed valent copper ions.

150 (Added). The superconductive method according to claim 149 in which the copper-oxide compound includes at least one element in a nonstoichiometric atomic proportion.

151 (Added). The superconductive method according to claim 150 in which oxygen is present in the copper-oxide compound in a nonstoichiometric atomic proportion.

152 (Added). A superconductive method for conducting an electric current essentially without resistive losses, comprising:

(a) providing a superconductor element made of a superconductive composition, the superconductive composition

consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the copper-oxide compound including at least one element selected from the group consisting of a rare-earth element and a Group III B element and at least one alkaline-earth element, the composition having a superconductive/resistive transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$, the transition-onset temperature T_c being greater than 26 K;

(b) maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$ of the superconductive composition; and

(c) causing an electric current to flow in the superconductor element.

153 (Added). The superconductive method according to claim 103 in which said at least one element is lanthanum.

154 (Added). The superconductive method according to claim 152 in which the alkaline-earth element is barium.

155(Added). The superconductive method according to claim 152 in which the copper-oxide compound of the superconductive composition includes mixed valent copper ions.

156 (Added). The superconductive method according to claim 155 in

which the copper-oxide compound includes at least one element in a nonstoichiometric atomic proportion.

157 (Added). The superconductive method according to claim 156 in which oxygen is present in the copper-oxide compound in a nonstoichiometric atomic proportion.

158 (Added). A superconductive method for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) providing a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having aa substantially layered perovskite crystal structure, the composition having a superconductive transition temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from the group consisting of a Group II A element, a rare earth element; and a Group III B element;

(b) maintaining the superconductor element at a temperature

above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) causing an electric current to flow in the superconductor element.

159 (Added).. A superconductive method for conducting an electric current essentially without resistive losses, comprising:

(a) providing a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the copper-oxide compound including at least one element selected from the group consisting of

a Group II A element, a rare earth element and a Group

III B element, the composition having a superconductive/ resistive transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower

limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$ of the superconductive composition; and

(c) causing an electric current to flow in the superconductor element.

160 (Added). A superconductive method for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) providing a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the composition having a superconductive transition temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from the group consisting of a Group II A element and at least one element selected from the group

consisting of a rare earth element and a Group III B element;

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(b) maintaining the superconductor element at a temperature above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) causing an electric current to flow in the superconductor element.

161 (Added). A superconductive method for conducting an electric current essentially without resistive losses, comprising:

(a) providing a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered

perovskite crystal structure, the copper-oxide compound including at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, the composition having a superconductive/ resistive transition defining a superconductive-resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit

defined by an effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$ of the superconductive composition; and

(c) causing an electric current to flow in the superconductor element.

162 (Added). A superconductive method for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) providing a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a transition metal oxide compound having a substantially layered perovskite crystal structure, the composition having a superconductive transition

temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from

the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element;

(b) maintaining the superconductor element at a temperature above 26°K and below the superconductor transition T_c of the superconductive composition; and

(c) causing an electric current to flow in the superconductor element.

163 (Added). A superconductive method for conducting an electric current essentially without resistive losses, comprising:

(a) providing a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a transition metal-oxide compound having a substantially layered perovskite crystal structure, the transition metal-oxide compound including at least one element selected from the group consisting of a Group II A element and at least one element